Learning to Read
with
Multimedia

You probably don't remember the long, difficult process of learning to decode arbitrary-looking black marks on white paper and to extract their meaning. Yet learning to read is perhaps one of our greatest intellectual achievements. Not many adults understand what a complicated process it is, partly because most people have been reading for decades and partly because of a mistaken assumption that adults learn in the same way as children.

Real Learning problems with real learning solutions

Dr. Colin Terrell, Dean of the Faculty of Education and Health at Cheltenham and Gloucester College of Higher Education, had the brilliantly simple notion of harnessing the Apple™ Macintosh™ and HyperCard™ to present children's readers as 'Books that Talk'. The clever part is that the child controls whether and when the book talks.

"The Apple Macintosh, with its superb graphic and sound capabilities, coupled with its legendary ease of use, made the whole thing a sensible proposition" states Terrell. "It was a relatively simple matter to scan in the relevant images, digitise the sound and synchronise them together with HyperCard."

Five year olds can work the system without difficulty; they look at the picture, read out the words they recognise and point and click on any they don't; the word is then highlighted and simultaneously spoken in a prerecorded child's voice. If they want to listen to the whole page, they click on 'read the page'. Finally they click on the right or left arrow to move forward or back one page. Terrell points

out, "Teachers and pupils seem to prefer listening to a child's voice – perhaps children find it less threatening than an adult voice."

"Unlike teachers and parents who have many other demands on their attention, the Apple Macintosh has endless patience," observes Terrell. "The practice is private, and mistakes don't matter. When the child feels confident, she or he leaves the computer and reads the real book to the teacher." Later, or even while the child is reading, the teacher can study which words each child requested and how many times. This record of 'help requested' is generated automatically, and is useful for diagnosis and remedial work, so the teacher knows what difficulties the pupil is having and therefore where to concentrate effort in the future.

Quantum leap in quality and ease of use

Terrell's interest in the teaching of reading has involved research with computers over the last decade, with hardware ranging from an Apple II, through to a BBC Micro, to his current combination of an Apple Macintosh SE with a scanner for digitising pictures, and MacRecorder™ for capturing natural speech sounds. Terrell observes, "Previous speech gathering equipment was often limited to Dalek-like synthesised voices with flat intonation and unreliable pronunciation; the children didn't object but their teachers found it unacceptable. Pictures, when available, were at best crude imitations, often unrelated to the school's reading scheme, and as a result, teachers were understandably reluctant to use substitute reading material."
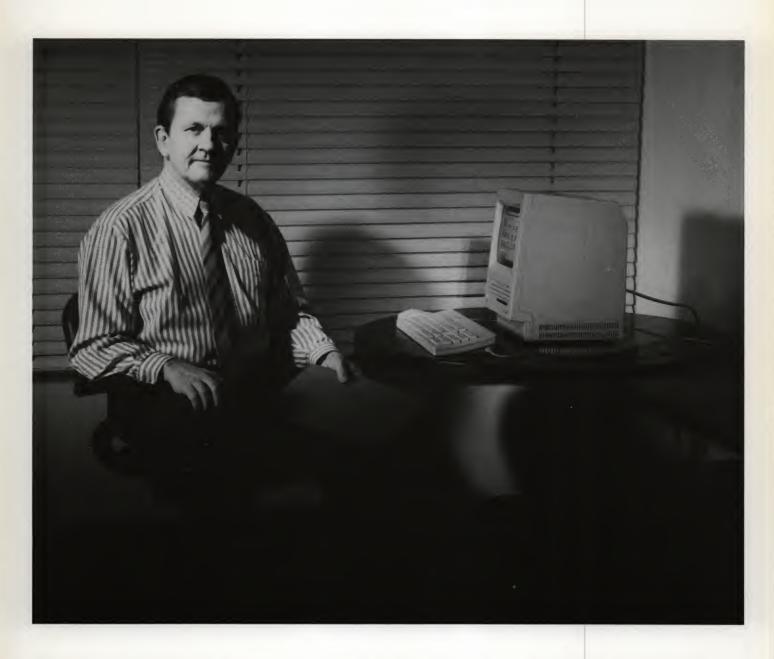
The Apple Macintosh represents a quantum leap both in quality and ease of use; the voice is that of a child, not a Dalek, and words that sound different in isolation are recorded separately from the elided form (say 'would you' fast and you'll introduce a J-sound not present in either word spoken alone). By agreement with the publisher of the books, real illustrations are scanned in and actual text is printed on screen, making the reading experience very realistic. "The Apple Macintosh can support the school's own reading scheme, rather than compete with it" claims Terrell.

Publishers see potential

Like most simple ideas, this one involved Terrell in a lot of work and some difficult decisions. The first publisher to grasp the potential was Longman, whose recent 'Reading World' series is used in thousands of primary schools. The 78 most stimulating stories were chosen from over 300 tried out on real children, and published after piloting in 60 schools. Author Wendy Body saw a demonstration of Books that Talk and was so impressed that permission to use Longman's materials rapidly followed. Ultimately Longman hopes to publish the software.

Scanning in the pictures involves some skill and judgment: the series is portrait format in colour whereas the HyperCard screen is landscape and monochrome, so scanned pictures must be cropped or extended sympathetically, as well as tidied up. Recording the text is time-consuming: it certainly takes longer to secure a hesitation-free take from an untrained ten-year old than from a trained

adult, and even if all goes well it could take 4-6 hours for a 24-page book containing a hundred-odd words. Another challenge is that high quality sound and images are greedy for disk space; even an Apple Macintosh SE with a 20Mb hard disk can only store a few complete readers. "Obviously, the ideal publishing and distribution medium for Books that Talk is on CD-ROM. They have nearly 30 times the capacity of the hard disc we are using, and are low cost and extremely durable. To hold several reading schemes on a single compact disc would be ideal" concludes Terrell.

Once you've experienced Books that Talk, it's difficult to imagine any other sensible way of using a computer to teach reading: you look, choose when and whether to listen, and learn. What could be more natural?

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